

A NEW GENUS AND SPECIES OF DEEPWATER CLINGFISH (FAMILY GOBIESOCIDAE) FROM NEW ZEALAND

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ABSTRACT

Kopua nuimata new genus and species, is described from seven specimens taken from northern New Zealand waters, in depths of 166-337 m. Provisionally included in the Trachelosmininae, *Kopua* differs from other genera so included, in having relatively large eyes, an extremely narrow bony interorbit, and 35-36 vertebrae.

In recent years a number of deepwater clingfishes have been collected from northern New Zealand waters, by National Museum of New Zealand personnel. Some of these have recently been described within a new genus (Hardy, 1983); this paper reports a second new genus, based on specimens from NW of Three Kings Islands, and NW of White Island in the Bay of Plenty.

Terminology and methods follow those of Briggs (1955), except caudal ray counts, which follow Smith-Vaniz (1971). Counts were taken from radiographs, and from a cleared and alizarin-stained specimen. Measurements are rectilinear between points made with dial calipers or fine point dividers. Specimens are deposited in the Academy of Natural Sciences of Philadelphia (ANSP), and the National Museum of New Zealand, Wellington (NMNZ).

Kopua new genus

Type Species.—*Kopua nuimata* new species described herein.

Description.—The following description considers only those features considered important as generic characteristics; those remaining will be enumerated in the species' description.

Body slender and moderately depressed anteriorly (Fig. 1); head slender with snout short and rounded; mouth marginally inferior; upper lip broad, barely narrowing at sides; eyes very large, with bony interorbit extremely narrow (Fig. 2); gill membranes united and free from isthmus, fused laterally opposite 4th pectoral ray; 4 gill arches, all bearing rakers and filaments; fleshy pectoral pad absent; pelvic disc "double," as defined by Briggs (1955), the striated, posterior fringe with distinctively squared, posterolateral "corners" (Fig. 3); dorsal and anal fins moderately long, free from caudal fin.

Premaxillae with medial edges essentially parallel, separated by a narrow slit, which widens slightly anteriorly, lateral edges deeply notched at base of ascending

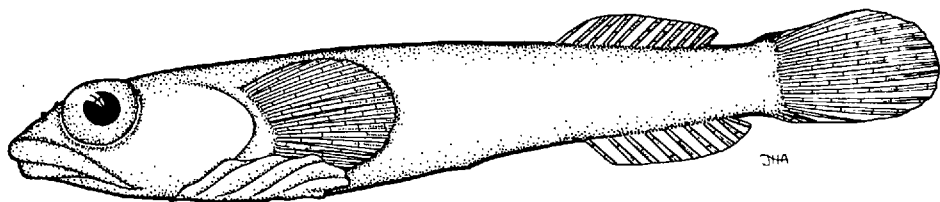


Figure 1. *Kopua nuimata* new species. Holotype, NMNZ P.13109, 20.0 mm SL.

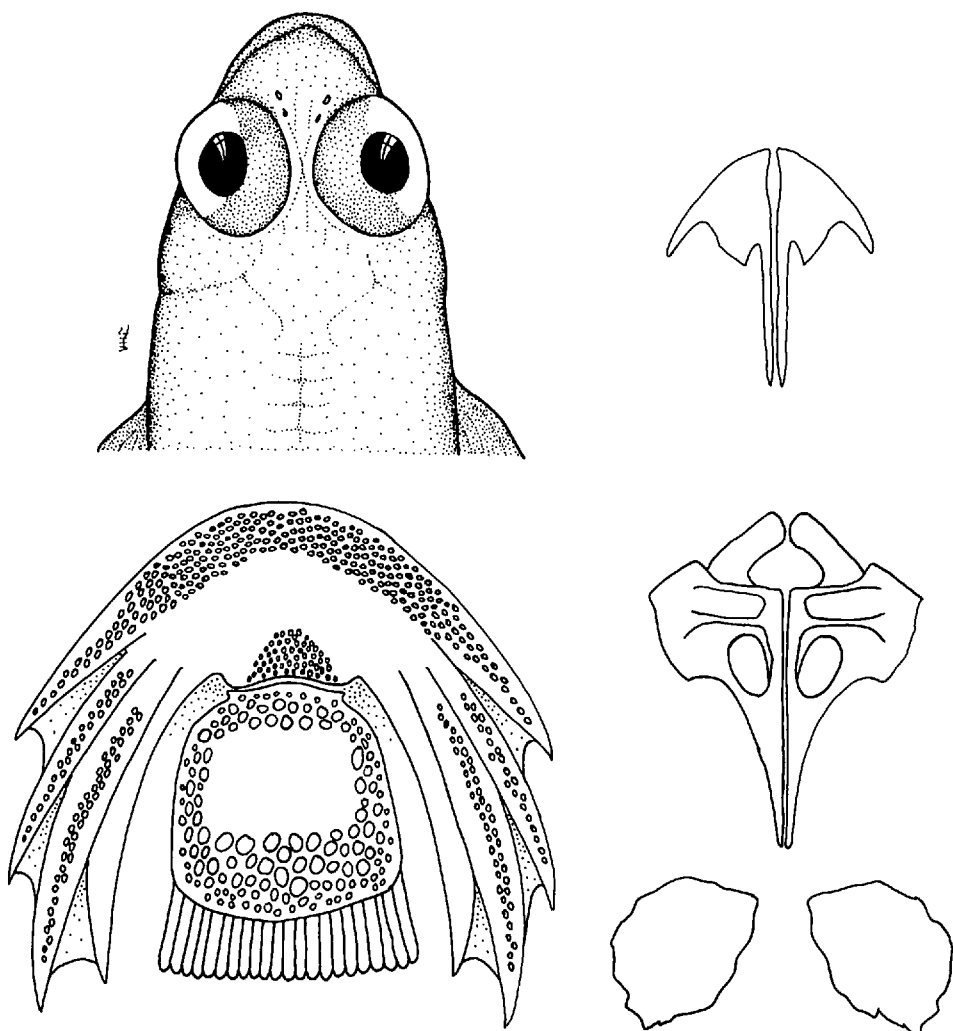


Figure 2. (Upper Left) *Kopua nuimata*. Dorsal view of head (holotype).

Figure 3. (Lower Left) Ventral view of disc surface.

Figure 4. (Upper Right) Dorsal view of premaxillaries.

Figure 5. (Lower Right) Ventral view of disc skeletal supports.

process (Fig. 4); anguloarticular foramen absent; ectopterygoid moderately large, with an anteriorly projected process; no subopercular spine; pelvic skeleton with medial ends of transverse, ventral struts well separated, posteriorly fails to reach level of ventral postcleithra (Fig. 5); dorsal postcleithra present but very small; no supplementary postcleithrals; vertebrae 35–36; branchiostegals 6, based on ceratohyal.

No apparent external sexual dimorphism.

Etymology.—*Kopua* is from the New Zealand Maori language, “kopua” meaning “deep water” and refers to the considerable depths (for gobiesocids) from which specimens have been taken.

Remarks.—According to Briggs’ (1955) subdivision of the Gobiesocidae, which

Table 1. Selected characteristics of genera currently included in the Subfamily Trachelochisminae

	<i>Creocele</i> Briggs, 1955	<i>Dellich-</i> <i>thys</i> Briggs, 1955	<i>Condens</i> Briggs, 1955	<i>Trache-</i> <i>loch-</i> <i>ismus</i> Brisout de Barne- ville, 1846	<i>Kopua</i> n. gen.
Gill rakers*	7	14	7	6-8	7-8
Fleshy pad on pectoral-fin base	present	present (small)	present (small)	absent	absent
Subopercular spine	present	absent	absent	absent	absent
Number of times eye diameter contained in bony interorbit	1.1-1.6	0.5-0.8	0.6-0.8	0.8-1.8	0.1-0.2
Anguloarticular foramen	?	absent	absent	present	absent
Anteriorly projected process on ectopterygoid	absent	absent	present	absent	present
Pelvis extended to at least level with ventral postcleithral bones	yes	yes	yes	yes	no
Dorsal-fin rays	9-10	8-9	8-9	7-11	10-11
Anal-fin rays	6-7	8-9	5-8	5-8	8-9
Pectoral-fin rays	24-25	21-23	20-22	22-26	23-25
Vertebrae (total)	33	32	31	31-33	35-36

* On anterior edge of second gill arch.

is now in need of revision (Springer and Fraser, 1976), *Kopua* keys out to the Trachelochisminae, bringing to five the number of genera recorded for that subfamily.

Kopua is the only deepwater representative of the group, and is most easily distinguished from the other trachelochismine genera, which are predominantly inter-tidal, by the extremely narrow, bony interorbit and correspondingly large eyes, and the squared, posterolateral corners of the pelvic disc posterior fringe. The genus *Gastrocymba*, which Briggs (1955) included in the Trachelochisminae, is not considered following Springer and Fraser's (1976) observation that it more appropriately belonged in the Diplocrepinae.

Selected characteristics, useful in combination for identification of trachelochismine genera, are included in Table 1.

Kopua nuimata new species

Figures 1-5, Table 1

Material Examined.—Holotype, NMNZ P.13109, 20.0 mm SL, Rangatira Knoll, NW of White Island (37°17.4'S, 176°53.6'E), 337-292 m, R. V. TANGAROA (Biological Station 842), 23 January 1981. Paratypes, ANSP 150236, 19.5 mm SL, Rangatira Knoll, NW of White Island (37°15.8'S, 176°50.4'E), 160-166 m, R. V. TANGAROA (Biological Station 711), 20 January 1979; NMNZ P.9928 (3 spec.), 25.0-26.6 mm SL, Middlesex Bank, NW of Three Kings Islands (34°02.1'S, 171°45.8'E), 221-206 m, R. V. TANGAROA (Biological Station 897), 31 January 1981; NMNZ P.13110, 28.0 mm SL, data as for holotype. Non-type, NMNZ unreg., disarticulated cleared and stained specimen.

Diagnosis.—Eyes large and bony interorbit extremely narrow (greatest diameter of eye contained 0.1-0.2 times in bony interorbit). Body slender, with 35-36 vertebrae. Subopercular spine and fleshy pad on the base of the pectoral fin absent. Ectopterygoid moderately large, possessing an anteriorly projected process. Pelvic skeleton with medial ends of transverse, ventral struts well separated; posterior extensions well short of level of ventral postcleithra.

Description.—The following counts and proportions (given as times in standard length unless otherwise stated) are for the holotype and in parentheses, the range for 5 paratypes: head length 3.2 (2.9–3.0), width 5.6 (4.2–6.3); snout 4.2 (3.2–4.2) in head; post-orbital length 2.0 (1.9–2.0) in head; nostrils on each side well separated, tubular, anterior pair more elongate, lacking a dermal flap; eyes 2.9 (2.8–3.0) in head and 0.1 (0.1–0.2) in bony interorbit; pore system well developed, on head only.

Flattened, broadly rounded teeth projecting well forward from anterior of lower jaw, with smaller, curved, pointed teeth in more upright position behind outermost row; single row of large, but irregularly sized teeth along side of jaw; teeth on side of upper jaw similar to opposing teeth, those anteriormost on jaw longest, slightly curved and blunt, with a restricted inner pad of much smaller, pointed teeth. Pelvic disc length 4.7 (4.4–5.1), papillate anteriorly, with a simple anterior margin (Fig. 3).

Dorsal and anal fins well developed, moderately long, not overlapping caudal fin base; predorsal length 1.5 (1.4–1.5); preanal length 1.4 (1.4); body depth 6.7 (6.3–8.3); caudal peduncle length 7.1 (8.0–10.6), depth 9.5 (8.9–11.9); pectoral length 6.5 (5.3–5.7); dorsal base length 4.0 (3.6–3.8); anal base length 5.1 (4.5–5.5). D. 11 (10–11); A. 9 (8–9); P. 24/25 (23–25); C. rounded, 6+5+5+5 (6+7+5+6+5+5+7); gill rakers short, pointed, 7 (7–8) on leading edge of 2nd gill arch; vertebrae 14+21 (14–15+21).

Pigmentation.—All of the specimens are devoid of pigment in spirit, except for the dark eyes. The life coloration is unknown.

Distribution and Habitat.—*Kopua nuimata* has been recorded from 2 localities, both in northern New Zealand waters; Middlesex Bank; NW of Three Kings Islands (206–221 m), and at 3 stations on Rangatira Knoll, NW of White Island (166–337 m). The species is taken from a hard substratum, of a typically mixed shell/bryozoan character.

Etymology.—The specific epithet is formed from the New Zealand Maori words “nui” meaning “big” and “mata” meaning “eye.”

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LITERATURE CITED

- Briggs, J. C. 1955. A monograph of the clingfishes (Order Xenopterygii). Stanford Ichthy. Bull. 6: 1–224.
- Hardy, G. S. 1983. A new genus and two new species of clingfishes (Family Gobiesocidae) from New Zealand. *Copeia*, 1983: 863–868.
- Smith-Vaniz, W. F. 1971. Another new species of the clingfish genus *Derilissus* from the Western Atlantic (Pisces: Gobiesocidae). *Copeia*, 1971: 291–294.
- Springer, V. G. and T. H. Fraser. 1976. Synonymy of the fish families Cheilobranchidae (=Alabetidae) and Gobiesocidae, with descriptions of two new species of *Alabes*. *Smithson. Contr. Zool.*, No. 234: 1–23.

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